

ABSTRACT

A MMIC based superheterodyne receiver for converting at RF energy in an upper and a lower frequency band includes at least one attenuator for the RF energy input, a mixer for mixing the lower band input with a LO1 signal, another mixer for mixing the upper band input with the LO1 signal, a switch to direct the LO1 signal to the first mixer or to the second mixer, and a third mixer for mixing a LO2 signal with the first stage mixer output to produce a signal at the output frequency. Passband filters at the outputs of the mixers can reject interfering mixer-generated frequencies. Input frequency range can span 0.1 to 18 GHz with a 160 MHz or 1 GHz output. A modular receiver can have two or more converter modules for each LO module. The receiver can receive antenna input directly, without pre-mixing filtering or attenuating.